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METHOD FOR MAINTAINING THE QUALITY OF PRODUCED PRODUCTS

(1) Field of the Invention

The present invention generally relates to a method
5 for maintaining the quality of produced products and more particularly, to a method which allows products to be quickly and efficiently located within a storage facility in order to allow repairs or modifications to be made to these products before they are shipped to a customer or
10 dealer.

(2) Background of the Invention

Products or items, such as and without limitation
vehicles, are typically produced or created within a
15 manufacturing plant or facility. The produced products are then typically driven or placed within a temporary storage yard or facility where they are selectively placed upon a railcar or other type of transport carrier or conveyance for shipment to a dealer or customer.
20 Oftentimes, no record is kept of the initial location of each of these items within the yard. Further, no record is typically kept of the various locations that these items are respectively and later moved to or driven to within the yard, as new items are received. Hence, a
25 manual search of the entire yard must usually be made in

order to locate a particular item, should the item require service or repair prior to shipment.

Sometimes a plant or manufacturing facility will discover that previously manufactured items, including those items or products which have been placed within the storage yard for shipment, have an undesirable attribute or characteristic that must or should be corrected or repaired. Due to the relatively high cost of notifying customers of these needed modifications and the relatively high cost of having a dealer or other third party make these needed modifications, it is highly desirable to make these modifications to the products before they are shipped from the yard.

In the past, upon the discovery of such an undesirable attribute or characteristic, shipment from the yard was interrupted and/or stopped while the yard was manually searched for the items which were to be modified. Such an interruption caused an undesirable delay in shipping products, disrupted the entire product shipping schedule, and increased overall production cost, as the plant production schedule was similarly disrupted.

There is therefore a need for a method for maintaining the quality of manufactured items or products in a manner which overcomes at least some of the drawbacks of the previously delineated methods and for "containing" and rectifying undesirable attributes and/or

characteristics of products before they are transported to customers and/or dealers of a business enterprise.

SUMMARY OF THE INVENTION

5 It is a first object of the present invention to provide a method for maintaining the quality of manufactured or produced items in a manner which overcomes at least some of the previously delineated drawbacks of prior methods.

10 It is a second object of the present invention to provide a method for maintaining the quality of manufactured or produced items in a manner which overcomes at least some of the previously delineated drawbacks of prior methods and which allows these items
15 to be quickly and efficiently located within a storage yard or facility, effective to contain and rectify undesirable product attributes/characteristics.

 According to a first aspect of the present invention, a method for maintaining the quality of an
20 item is provided. The method comprises the step of placing the item within a certain facility; storing the location of the item; and using the stored location to retrieve the item and to make repairs to the item.

 These and other features, aspects, and advantages of
25 the present invention will become apparent from a reading of the following detailed description of the preferred

embodiment of the invention and by reference to the following drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

5 Figure 1 is a flowchart which illustrates and/or comprises the methodology of the preferred embodiment of the invention; and

Figure 2 is a block diagram of an item reception area which incorporates the methodology of the preferred
10 embodiment of the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT OF THE INVENTION

Referring now to Figures 1 and 2, there is
15 respectively shown a flowchart 10 which illustrates and/or comprises the methodology of the preferred embodiment of the invention and a block diagram of an item reception area which utilizes the methodology of the preferred embodiment of the invention.

20 As shown, flowchart or methodology 10 includes a first step 12 which requires the receipt of and/or production or manufacture of certain items, such as vehicles 11 shown in Figure 2. It should be appreciated that while the following discussion describes the use of
25 the methodology of the preferred embodiment of the invention 10 with vehicles 11, the methodology 10 may be

used with a wide variety of dissimilar items and nothing in the specifications should limit the scope of the invention to vehicles. Step 14 follows step 12 and, in this step, a selectively readable tag or tag assembly, such as tag or tag assembly 13, is placed upon each of the vehicles 11. Such a tag or assembly 13 may comprise, by way of example and without limitation, the electronic tags or devices referred to by reference number "16" and described within United States Patent Number 5,920,287 ("the '287 patent") which is fully and completely incorporated herein by reference, word for word and paragraph for paragraph. Each member 13 may also comprise the combination of such a tag 16 and a device or a member which may selectively receive information and which is adapted to allow the received information to be selectively "read" or scanned by an optical or bar code reader type assembly (not shown). Tags 13 may also be selectively "read" or scanned by the use of the tag readers or reader assemblies which are described within the '287 patent and which are generally referred to by reference number "10" within the '287 patent. Such readers are generally shown as members or assemblies 17 within Figure 2 of this Application. Step 15 follows step 14 and, in this step, the received items are placed within a storage yard or storage facility 19. The storage facility 19 similarly may selectively include the

tracking and processing aspects and/or devices of the system which is more fully described within the '287 patent (e.g., the "RF processor system" and "asset management database"), including the computer which is referred to by reference number "26" within Figure 1 of the '287 patent and within Figure 2 of this application.

Step 16 follows step 15 and, in this step, the location of each of the vehicles 11 is stored within a computer system, such as computer system 26 which is described within the '287 patent. This step 16 may be accomplished by placing a unique and selectively readable identification number on and/or within each tag assembly 13 and separately interrogating each tag assembly 13 as the vehicles 11 respectively enter the yard or facility 19 and/or when they are stored at a certain respective initial location. In this manner, the respective identifying vehicle numbers and respective vehicle locations are obtained and placed within a computer database which may be contained within computer 26. Hence, each received vehicle 11 together with its respective initially stored location is contained within computer 26.

Step 18 follows step 16 and, in this step, a service request or need is communicated to personnel within the yard or storage facility 19 from the manufacturing plant (not shown), indicating that a certain and previously

received vehicle 11 may require certain modifications and/or a certain group of previously received vehicles 11 may need certain service or repair. This need may also arise from those individuals residing within the storage yard or facility 19, or may emanate from various other sources (i.e., a component provider or manufacturer).

Step 20 follows step 18 and, in this step, the tags 13 are remotely and "dynamically" interrogated by the cooperative operation of members or assemblies 17 and computer 26 to verify the previously stored vehicle location and/or to determine the current location of a certain "targeted" vehicle 11 (i.e., a vehicle 11 requiring service), or certain group of targeted vehicles 11, thereby allowing the targeted vehicle(s) 11 to be quickly and efficiently accessed within the yard or storage facility, even if the vehicle(s) 11 have been moved from its and initially stored location. As used in this application, the term "dynamically" means that the respectively stored location of each of the vehicles 11 may be obtained even if these vehicles 11 have been moved from their respective and initial storage position within facility or yard 19 and without the need to manually search for these vehicles 11 within the facility or yard 19.

Step 21 follows step 20 and, in this step, the vehicles 11 or units in need of service are placed "on

hold". In the preferred embodiment, the "on hold" status may be selectively placed into the respective tag 13 of any of the targeted vehicles 11 or units that are in need of service or repair, and is effective to substantially prevent these vehicles 11 or units from being shipped from the facility or yard 19. That is, personnel "reading" the tags 13 (i.e., by use of a scanner device) prior to vehicle shipment are automatically and/or electronically notified of the "on hold" status of the vehicles 11 and accordingly do not ship the vehicles 11. Alternatively, such an "on hold" status may be placed within a computer 26 or the previously delineated computer database and such "on hold" status may appear upon the screen or display portion of the computer 26. Step 22 follows step 21 and, in this step, the needed service is accomplished, thereby substantially preventing vehicles 11 having known and undesirable characteristics or attributes from being shipped. Once the service/repair has been performed on each of the targeted vehicles 11, the respective "on hold" status is removed or "deprogrammed" from the respective vehicle tags 13 and/or from the computer data base, thereby allowing the vehicles 11 to be transported from the facility or yard 19.

It is to be understood that the invention is not limited to the exact method and/or construction which has

been previously described, but that various changes and modifications may be made without departing from the spirit and the scope of the invention as is more fully delineated in the following claims. Moreover, it should
5 be realized that the foregoing method allows a business enterprise to maintain the overall quality of produced products and to contain and selectively rectify undesirable attributes and/or product characteristics within a temporary storage facility, before such products
10 are shipped or transported to a customer or dealer.

WHAT IS CLAIMED IS:

- (1) A method comprising the steps of:
receiving an item;
5 placing the item within a storage facility;
identifying a modification to be made to the item;
dynamically locating said item within said storage
facility;
performing said modification to said item; and
10 shipping said item when said modification has been
made to said item.
- (2) The method of claim 1 wherein said item comprises a
vehicle.
- (3) The method of claim 2 wherein said step of
15 dynamically locating said item comprises the steps of:
placing a selectively readable tag on said item; and
remotely reading said tag.
- (4) The method of claim 3 wherein said tag is an
electronic tag which is selectively read from a remote
20 location.
- (5) The method of claim 4 further comprising the steps
of:
creating certain status indicator after said modification
has been identified.

(6) The method of claim 5 wherein said certain status indicator is effective to prevent said item from being shipped.

(7) The method of claim 5 wherein said certain status indicator is selectively programmed into said tag.

(8) The method of claim 7 further comprising the step of:

eliminating said certain status indicator after said modification has been performed.

(9) The method of claim 8 wherein said certain status is selectively removed from said tag after said modification has been performed.

(10) The method of Claim 1 wherein said item is placed into a first location within said storage facility, moved to a second location, and located after said item has been moved to said second location.

(11) A method for maintaining the quality of a plurality of produced products comprising the steps of:

receiving said plurality of products;

placing a remotely readable electronic tag on each of said products;

placing said plurality of products within a storage facility;

receiving a service request for at least one of said plurality of products;

creating a certain indicator;

associating said certain indicator with said at least one product, effective to prevent said at least one product from being shipped;

remotely locating said at least one product by use
5 of said tags; and

providing service to said at least one product, thereby maintaining the quality of said at least one product.

(12) The method of claim 11 wherein each of said
10 plurality of products comprise vehicles.

(13) The method of claim 12 wherein said step of associating said certain status indicator with said at least one product comprises selectively placing said indicator within said tag residing upon said at least one
15 product.

(14) The method of claim 13 wherein said at least one product is stored at a certain location and said certain location is stored within a computer system.

(15) A method comprising the steps of:

20 receiving a plurality of vehicles;

placing a selectively readable tag on each of said plurality of vehicles, each of said tags including first data uniquely identifying the vehicle upon which said tags respectively reside;

25 interrogating each of said tags to receive said respective first data of each of said vehicles;

receiving a service notification relating to at least one of said vehicles;

associating a certain status with said at least one of said vehicles;

5 determining said location of said at least one of said vehicles by interrogating said tag residing upon said at least one of said vehicles; and

performing service to said located at least one of said vehicles, effective to correct said undesirable
10 characteristic and prevent said at least one of said vehicles from being shipped with said undesirable characteristic.

(16) The method of claim 15 wherein said vehicles are placed within a storage yard.

15 (17) The method of claim 16 wherein said status is programmed into the tag which is disposed upon said at least one of said vehicles.

(18) The method of Claim 15 wherein said at least one of said vehicles is positioned at a first location and is
20 moved to a second location at which said tag residing upon said at least one of said vehicles is interrogated.

(19) The method of Claim 17 further comprising the step of removing said certain status from said tag which is disposed upon said at least one of said vehicles.

25 (20) The method of Claim 19 wherein said certain status is resident within a computer.

ABSTRACT OF THE DISCLOSURE

A method 10 for maintaining the quality of produced goods by selectively, automatically, and remotely identifying the location of the goods 11 within a storage facility 19, thereby allowing modifications to be efficiently made to the located goods 11 in order to maintain the quality of the goods 11.

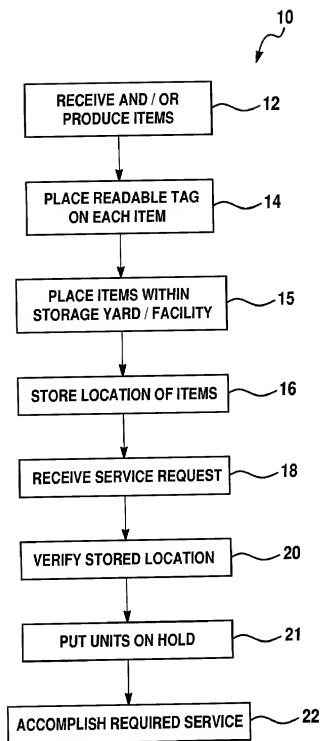


Figure 1

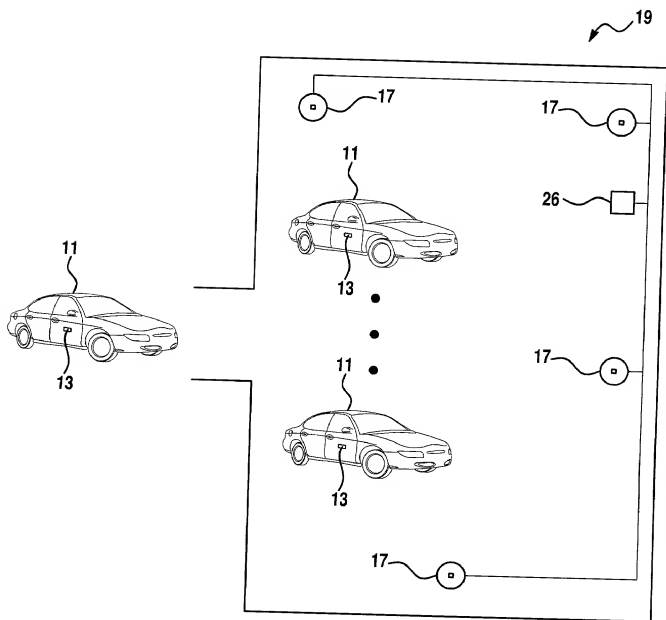


Figure 2

DECLARATION AND POWER OF ATTORNEY - ORIGINAL APPLICATION

Attorney's Docket No.
200-0621

As a below named inventor, I hereby declare:

My residence, post office address and citizenship are as stated below next to my name;

I verily believe I am the original, first and sole inventor or an original, first and joint inventor of the subject matter that is claimed and for which a patent is sought on the invention entitled

METHOD FOR MAINTAINING THE QUALITY OF PRODUCED PRODUCTS

the specification of which is attached hereto.

I have reviewed and understand the contents of the specification identified above, including the claims.

I acknowledge my duty to disclose information of which I am aware that is material to the examination of this application in accordance with Section 1.56(a), Title 37 of the Code of Federal Regulations; and

as to application for patents or inventor's certificate on the invention filed in any country foreign to the United States of America, prior to this application by me or my legal representatives or assigns,

☒ no such applications have been filed, or

☐ such applications have been filed as follows

COUNTRY	APPLICATION NO.	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)	PRIORITY CLAIMED UNDER 35 USC 119

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

(Application Number) (Filing Date) (Status - patented, pending, abandoned)

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POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the United States Patent and Trademark Office connected therewith and to act on my behalf before the competent International Authorities in connection with any and all international applications filed by me.
(List name and registration number)

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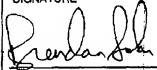
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

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